

REMARKS

This is intended as a full and complete response to the Office Action dated October 20, 2003, having a shortened statutory period for response set to expire on January 20, 2004. Claims 1-24 remain pending in the application and are shown above. Claims 1-24 are rejected by the Examiner. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 3-6, 11-12, 15, and 22, are rejected under 35 U.S.C. § 112, second paragraph. Claims 3-6, 11-12, 15, and 22, are amended as necessary to correct matters of form, provide correct antecedent basis, and clarify the invention. Withdrawal of the rejection is respectfully requested.

Claims 1-5 and 7-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Meyer et al.* U.S. Patent No. 4,600,686. The Examiner asserts that it would have been obvious to one with ordinary skill in the art to modify the process of *Meyer et al.* to teach the invention. Applicants respectfully respond to this rejection.

Meyer et al. discloses depositing a chromium layer, depositing and patterning a photoresist, forming an etch resistant skin over the patterned photoresist and on the exposed portions of the substrate and baking the substrate so that the chromium reacts with the resist, and etching the chromium layer with carbontetrachloride (CCl₄), oxygen, and a carrier gas of Argon or carbon monoxide.

Meyer et al. does not teach, show, or suggest positioning the reticle on a support member in a processing chamber, wherein the reticle comprises a metal photomask layer formed on a silicon based substrate and a patterned resist material deposited on the metal photomask layer, introducing a processing gas comprising carbon monoxide and chlorine gas into the processing chamber, wherein the carbon monoxide and the chlorine gas have a molar ratio between about 1:9 and about 9:1, and delivering power to the processing chamber to generate a plasma and remove exposed portions of the metal photomask layer, as recited in claim 1, and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

Claims 6 and 13-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Meyer et al.*, U.S. Patent No. 4,600,686 in view of *Kornblit et al.*, U.S. Patent No.

5,948,570. The Examiner asserts that it that it would have been obvious to one with ordinary skill in the art to modify the process of *Meyer et al.* with the chlorine gas as taught by *Kornblit et al.* Applicants respectfully respond to this rejection.

Meyer et al. is described above. *Kornblit et al.* discloses etching a chromium layer with a gaseous mixture of oxygen, chlorine, and nitrogen as etchant species, in combination with a patterned organometallic resist, with nitrogen being added to reduce the undercut of the etch of the chromium material. *Kornblit et al.* does not suggest or motivate the use of carbon monoxide in etching a chromium layer.

The combination of *Meyer et al.* and *Kornblit et al.* does not teach, show, or suggest positioning the reticle on a support member in a processing chamber, wherein the reticle comprises a metal photomask layer formed on a silicon based substrate and a patterned resist material deposited on the metal photomask layer, introducing a processing gas comprising carbon monoxide and chlorine gas into the processing chamber, wherein the carbon monoxide and the chlorine gas have a molar ratio between about 1:9 and about 9:1, and delivering power to the processing chamber to generate a plasma and remove exposed portions of the metal photomask layer, wherein the processing gas further comprises a chlorine containing gas is selected from the group consisting of silicon tetrachloride (SiCl_4), boron trichloride (BCl_3), and combinations thereof, as recited in claim 6, and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

The combination of *Meyer et al.* and *Kornblit et al.* does not teach, show, or suggest positioning the reticle on a support member in a processing chamber, wherein the reticle comprises a chromium based photomask layer formed on an optically transparent silicon based material and a patterned resist material deposited on the chromium based photomask layer, introducing a processing gas comprising carbon monoxide and chlorine gas, wherein the molar ratio between carbon monoxide and chlorine gas is about 1:1, introducing an inert gas, maintaining a chamber pressure between about 2 milliTorr and about 25 milliTorr, delivering power to the processing chamber of about 700 watts or less to a coil disposed in the processing chamber to generate a plasma, and etching exposed portions of the chromium based photomask layer and selectively removing the chromium based photomask layer at a removal rate

ratio of chromium based photomask layer to resist material of about 3:1 or greater, as recited in claim 13, and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

The combination of *Meyer et al.* and *Kornblit et al.* does not teach, show, or suggest positioning the reticle on a support member in a processing chamber having a coil, wherein the reticle comprises a chromium based photomask layer formed on an optically transparent silicon based material and a patterned resist material deposited on the chromium based photomask layer, introducing a processing gas comprising carbon monoxide, chlorine gas, and an oxygen-containing gas into the processing chamber, wherein the molar ratio between carbon monoxide and chlorine gas is about 1:1, and the oxygen-containing gas comprises between about 5% and about 45% of the processing gas, introducing helium into the processing chamber, generating a plasma in the processing chamber, and etching exposed portions of the chromium based photomask layer and selectively removing the chromium based photomask layer at a removal rate ratio of chromium based photomask layer to resist material of about 3:1 or greater, as recited in claim 20, and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed. Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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